

## CLAIMS

What is claimed is:

1           1. A method for efficiently transmitting several multimedia streams to  
2 one or more multimedia receivers comprising:  
3           defining a minimum acceptable time for rendering a multimedia stream to  
4 a user when said user selects a particular stream;  
5           defining a packet size for packets containing data for each multimedia  
6 stream, said packet size defined based on one or more performance  
7 characteristics of mass storage devices on said one or more multimedia  
8 receivers;  
9           concurrently transmitting said packets for each multimedia stream to said  
10 one or more multimedia receivers;  
11           continually storing said multimedia streams on said mass storage devices;  
12 and  
13           playing back said multimedia content from said mass storage devices  
14 responsive to a user tuning to a particular multimedia stream when a delay  
15 greater than said minimum acceptable time would otherwise result waiting for a  
16 next packet containing data for said particular multimedia stream to arrive.

1           2. The method as in claim 1 wherein at least one of said performance  
2 characteristics is the seek time capability of said mass storage devices.

1           3. The method as in claim 1 wherein said defined packet size is further  
2 based a number of said packets which said multimedia receivers are capable of  
3 buffering in memory before storing said packets to said mass storage devices.

1           4. The method as in claim 1 wherein relatively larger packet sizes are  
2 selected for a relatively smaller number of packets capable of being buffered in  
3 memory.

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1           5. The method as in claim 1 wherein said defined packet size is greater  
2 than 188 bytes.

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1           6. The method as in claim 1 further comprising:  
2 simulcasting said multimedia streams using packets of a second defined  
3 packet size, said second defined packet size adapted to be processed by one or  
4 more legacy multimedia receivers.

1  
1           7. A method comprising:  
2 transmitting a plurality of packets of a specified size to a plurality of  
3 multimedia receivers, each of said plurality of packets containing content for one  
4 of a plurality of multimedia streams, wherein a delay in time between two  
5 successive packets containing data for one of said multimedia streams is greater  
6 than a minimum defined speed for displaying said one multimedia stream for an  
7 end user.

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1           8. The method as in claim 7 further comprising:  
2 playing back said one multimedia stream to a user from a mass storage  
3 device on said user's multimedia receiver responsive to said user selecting said  
4 stream for playback.

1           9. The method as in claim 8 further comprising:  
2           selecting said specified size of said plurality of packets based on one or  
3           more performance characteristics of said mass storage device.

1           10. The method as in claim 9 wherein one of said performance  
2           characteristics are seek time specifications of said mass storage device.

1           11. The method as in claim 1 further comprising:  
2           simulcasting said plurality of multimedia streams using packets of a  
3           second defined packet size, said second defined packet size adapted to be  
4           processed by one or more legacy multimedia receivers.

1           12. A method for reducing buffering requirements of a multi-stream  
2           multimedia receiver:  
3           for each multimedia stream, combining multimedia content contained in a  
4           plurality of PID packets into a single packet of a specified size;  
5           storing said multimedia content on a hard drive at said multimedia  
6           receiver; and  
7           playing back said multimedia content from said hard drive responsive to a  
8           user tuning to a stream carrying said multimedia content when a delay greater  
9           than a required channel tuning speed would otherwise result if said multimedia  
10          content were not played back from said hard drive.

1           13. The method as in claim 12 wherein said single packet size is 100  
2           Kbytes.

1 14. The method as in claim 12 further comprising:  
2 determining said single packet size based on a bitrate at which said  
3 multimedia content is transmitted.

1 15. The method as in claim 12 further comprising:  
2 simulcasting one or more streams in which said multimedia content  
3 contained in said plurality of PID packets is not combined into a single packet of  
4 said specified size.

1 16. The method as in claim 12 wherein said predetermined period of time  
2 is less than .25 seconds.

1 17. A method comprising:  
2 transmitting a first plurality of channels within a first plurality of frequency  
3 blocks having a first frequency range, said first frequency range being the range  
4 to which a legacy group of multimedia receivers are capable of tuning; and  
5 simulcasting said first plurality of channels within one or more alternate  
6 frequency blocks having an alternate frequency range, said alternate frequency  
7 range being the range to which an alternate group of multimedia receivers are  
8 capable of tuning.

1 18. The method as in claim 17 wherein said alternate frequency range is  
2 larger than said first frequency range.

1 19. The method as in claim 18 wherein said alternate frequency range is  
2 30 MHz and said first frequency range is 6 MHz.

1           20. The method as in claim 17 wherein said first plurality of channels  
2 transmitted in said first plurality of frequency blocks are encrypted using a first  
3 encryption technique and said second plurality of channels transmitted in said  
4 alternate frequency blocks are encrypted using a second encryption technique.

1           21. The method as in claim 20 wherein said first encryption technique is  
2 standard conditional access encryption and said second encryption technique is  
3 DES encryption.

1           22. The method as in claim 17 wherein said first plurality of channels  
2 transmitted in said first plurality of frequency blocks are compressed using a first  
3 compression technique and said second plurality of channels transmitted in said  
4 alternate frequency blocks are compressed using a second compression  
5 technique.

1           23. The method as in claim 22 wherein said first compression technique  
2 is MPEG-2 and said second compression technique is MPEG-4.

1           24. The method as in claim 17 wherein said first plurality of channels are  
2 transmitted in said first plurality of frequency blocks using a first PID packet size  
3 and said second plurality of channels are transmitted in said alternate frequency  
4 blocks using a second PID packet size.

1           25. The method as in claim 24 wherein said first PID packet size is 188  
2 bytes and said second PID packet size is 100 Kbytes.

1 26. A method comprising:

2 transmitting a plurality of packets with each packet in said plurality  
3 containing data for one of a plurality of multimedia streams, wherein packets  
4 containing data for at least one particular multimedia stream of said plurality are  
5 separated in said transmission by an amount of time greater than a required  
6 channel tuning speed at a multimedia receiver to which said plurality of packets  
7 are transmitted.

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1 27. The method as in claim 26 wherein said multimedia receiver  
2 comprises a buffer memory smaller than that required to concurrently buffer at  
3 least one of said plurality of packets for each of said plurality of multimedia  
4 streams.

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1 28. The method as in claim 27 further comprising:  
2 buffering said data for said plurality of multimedia streams on a mass  
3 storage device on said multimedia receiver.

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1 29. The method as in claim 28 further comprising:  
2 playing back one of said multimedia streams from said hard drive  
3 responsive to a user tuning to said stream when a delay greater than said  
4 required channel tuning speed would otherwise result if said multimedia stream  
5 were not played back from said hard drive.